

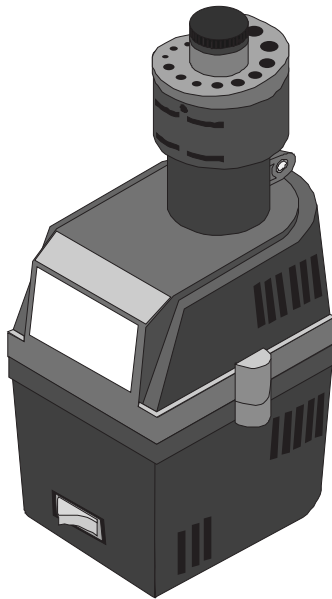
# CHICAGO

## Electric<sup>®</sup>Power Tools

### DRILL BIT SHARPENER

**Model 90287**

#### SET UP AND OPERATING INSTRUCTIONS



Visit our website at: <http://www.harborfreight.com>



**Read this material before using this product.  
Failure to do so can result in serious injury.  
SAVE THIS MANUAL.**

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**For technical questions or replacement parts, please call 1-800-444-3353.**

## SAVE THIS MANUAL

Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

## IMPORTANT SAFETY INFORMATION

In this manual, on the labeling, and all other information provided with this product:



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

### DANGER

**DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.

### WARNING

**WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.

### CAUTION

**CAUTION**, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

## NOTICE

**NOTICE** is used to address practices not related to personal injury.

## CAUTION

**CAUTION**, without the safety alert symbol, is used to address practices not related to personal injury.

## General Power Tool Safety Warnings



**WARNING** Read all safety warnings and instructions. *Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.*

**Save all warnings and instructions for future reference.**

*The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.*

1. **Work area safety**
  - a. **Keep work area clean and well lit.** *Cluttered or dark areas invite accidents.*
  - b. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** *Power tools create sparks which may ignite the dust or fumes.*
  - c. **Keep children and bystanders away while operating a power tool.** *Distractions can cause you to lose control.*
2. **Electrical safety**
  - a. **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with grounded power tools.** *Unmodified plugs and matching outlets will reduce risk of electric shock.*
  - b. **Avoid body contact with grounded surfaces such as pipes, radiators,**

**ranges and refrigerators.** *There is an increased risk of electric shock if your body is grounded.*

- c. **Do not expose power tools to rain or wet conditions.** *Water entering a power tool will increase the risk of electric shock.*
- d. **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.**
- e. **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** *Use of a cord suitable for outdoor use reduces the risk of electric shock.*
- f. **If operating a power tool in a damp location is unavoidable, use a Ground Fault Circuit Interrupter (GFCI) protected supply.** *Use of a GFCI reduces the risk of electric shock.*

### 3. **Personal safety**

- a. **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** *A moment of inattention while operating power tools may result in serious personal injury.*
- b. **Use personal protective equipment. Always wear eye protection.** *Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*
- c. **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking**

**up or carrying the tool.** *Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents.*

- d. **Remove any adjusting key or wrench before turning the power tool on.** *A wrench or a key left attached to a rotating part of the power tool may result in personal injury.*
- e. **Do not overreach. Keep proper footing and balance at all times.** *This enables better control of the power tool in unexpected situations.*
- f. **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** *Loose clothes, jewelry or long hair can be caught in moving parts.*
- g. **Only use safety equipment that has been approved by an appropriate standards agency.** *Unapproved safety equipment may not provide adequate protection. Eye protection must be ANSI-approved and breathing protection must be NIOSH-approved for the specific hazards in the work area.*

### 4. **Power tool use and care**

- a. **Do not force the power tool. Use the correct power tool for your application.** *The correct power tool will do the job better and safer at the rate for which it was designed.*
- b. **Do not use the power tool if the switch does not turn it on and off.** *Any power tool that cannot be controlled with the switch is dangerous and must be repaired.*
- c. **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** *Such*

*preventive safety measures reduce the risk of starting the power tool accidentally.*

- d. **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** *Power tools are dangerous in the hands of untrained users.*

- e. **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** *Many accidents are caused by poorly maintained power tools.*

- f. **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** *Use of the power tool for operations different from those intended could result in a hazardous situation.*

## 5. Service

- a. **Have your power tool serviced by a qualified repair person using only identical replacement parts.** *This will ensure that the safety of the power tool is maintained.*

### **Sharpener Safety Warnings**

- 1. Be careful of bits when sharpening. Bits will become hot. Handle with care; allow tips to cool before storing.
- 2. Sharpening head may become hot while using. This is a normal result of operation.
- 3. Maintain labels and nameplates on the tool. These carry important safety

information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

- 4. Avoid unintentional starting. Prepare to begin work before turning on the tool.
- 5. Do not leave the tool unattended when it is plugged into an electrical outlet. Turn off the tool, and unplug it from its electrical outlet before leaving.
- 6. This product is not a toy. Keep it out of reach of children.
- 7. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
- 8. **WARNING:** Handling the cord on this product will expose you to lead, a chemical known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling. (California Health & Safety Code § 25249.5, *et seq.*)
- 9. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.



**SAVE THESE  
INSTRUCTIONS.**

## GROUNDING

### **⚠️ WARNING**

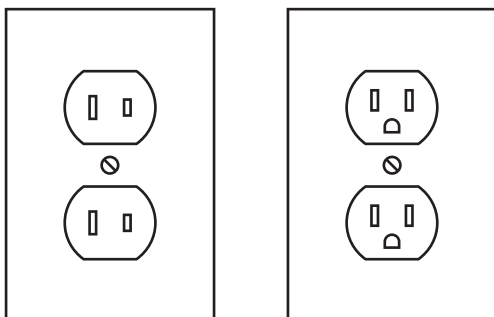
#### TO PREVENT ELECTRIC SHOCK

#### AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION:



Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

### **Double Insulated Tools: Tools with Two Prong Plugs**



**Outlets for 2-Prong Plug**

1. Tools marked “Double Insulated” do not require grounding. They have a special double insulation system which satisfies OSHA requirements and complies with the applicable standards of Underwriters Laboratories, Inc., the Canadian Standard Association, and the National Electrical Code. **(See Outlets for 2-Prong Plug.)**
2. Double insulated tools may be used in either of the 120 volt outlets shown in the

preceding illustration. (See Outlets for 2-Prong Plug.)




### **Extension Cords**

1. ***Grounded*** tools require a three wire extension cord. ***Double Insulated*** tools can use either a two or three wire extension cord.
2. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. **(See Table A.)**
3. The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. **(See Table A.)**
4. When using more than one extension cord to make up the total length, make sure each cord contains at least the minimum wire size required. **(See Table A.)**
5. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum cord size. **(See Table A.)**
6. If you are using an extension cord outdoors, make sure it is marked with the suffix “W-A” (“W” in Canada) to indicate it is acceptable for outdoor use.
7. Make sure the extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.

8. Protect the extension cords from sharp objects, excessive heat, and damp or wet areas.

<b>RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS*</b> (120/240 VOLT)					
<b>NAMEPLATE AMPERES</b> (at full load)	<b>EXTENSION CORD LENGTH</b>				
	<b>25'</b>	<b>50'</b>	<b>75'</b>	<b>100'</b>	<b>150'</b>
0 – 2.0	18	18	18	18	16
2.1 – 3.4	18	18	18	16	14
3.5 – 5.0	18	18	16	14	12
5.1 – 7.0	18	16	14	12	12
7.1 – 12.0	18	14	12	10	-
12.1 – 16.0	14	12	10	-	-
16.1 – 20.0	12	10	-	-	-
<b>TABLE A</b>	* Based on limiting the line voltage drop to five volts at 150% of the rated amperes.				

### Symbology

	Double Insulated
	Canadian Standards Association
	Underwriters Laboratories, Inc.
<b>V~</b>	Volts Alternating Current
<b>A</b>	Amperes
<b>n<sub>0</sub> xxxx/min.</b>	No Load Revolutions per Minute (RPM)

## **SPECIFICATIONS**

Required Power	120 V~, 60 Hz, 70 W
Speed	1,600 RPM
Capacity	9/64" to 25/64" (3.6 – 10 mm)

## **UNPACKING**

When unpacking, check to make the unit is intact and in working order. If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual.

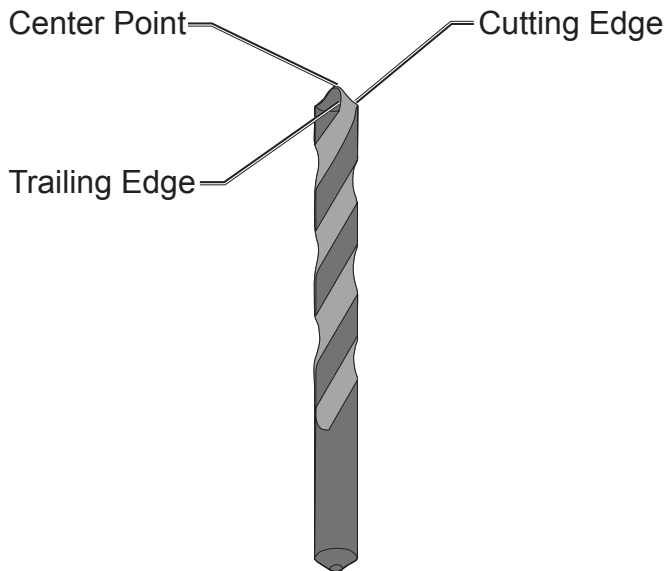


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## OPERATION

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### Properly Sharpened Bits



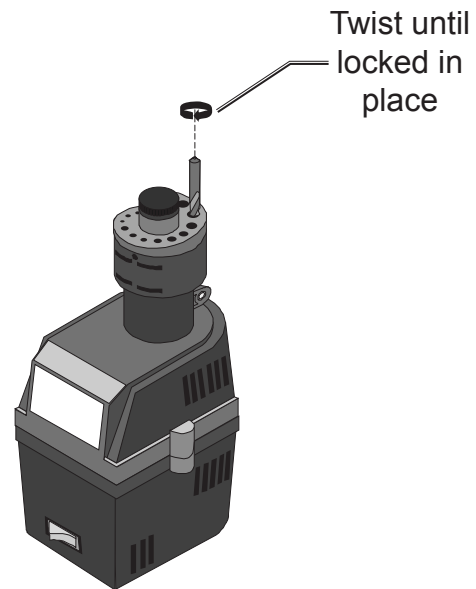
**Figure 1 — Parts of the Bit**

Your bit is properly sharpened when it has the following characteristics.

1. A sharp point in the center of the bit.
2. Two sharp and equal cutting edges.
3. Two trailing edges that are slightly lower than the cutting edges.

### Sharpening Procedure

1. Place sharpener on a flat, sturdy surface and plug in.
2. Select a clean bit to be sharpened and match its size with one of the holes in the head.



**Figure 2 — Putting Bits into Sharpener**

3. Put the bit into the appropriate hole and twist until it locks into place. See Figure 2.



**Figure 3 — Tilt the Bit**

4. Lean the bit towards the number on the outside of the hole. See Figure 3.
5. Turn the unit on while exerting a slight downward pressure onto the bit.
6. Turn unit off after about 5-10 seconds.
7. Examine bit according to the "Sharpening Troubleshooting" section, below.

## 8. **Sharpening Troubleshooting:**

- a. If the tip of the bit is turning blue, it is overheating. Reduce the amount of pressure and sharpening time. Cool bit in water between sharpening.
  - b. If one edge is longer than the other, and the point is not centered, sharpen the shorter side for a little less time. To prevent this from happening, sharpen both sides the same amount of time, using the same amount of pressure.
  - c. If you are sharpening a broken (rather than a dull bit) and the time required to get a sufficient edge is too long, rough the bit into shape first using a bench grinder.
9. **CAUTION:** Do not touch the end of the bit after it is sharpened. The bit will become hot!
  10. Repeat the above steps to the other side of the bit. Sharpen both sides the same amount of time, using the same amount of pressure.
  11. Repeat the above steps as necessary to sharpen bit.

## **Adjusting the Grinding Wheel**

1. Turn the ADJUSTING KNOB (1) to the right to raise the wheel. This will give you an aggressive cutting action. This is also useful when you are working with short bits.
2. Lower the wheel by turning the KNOB to the left. This is desirable when you wish a finer ground edge, though it will take longer and require more repetitions.



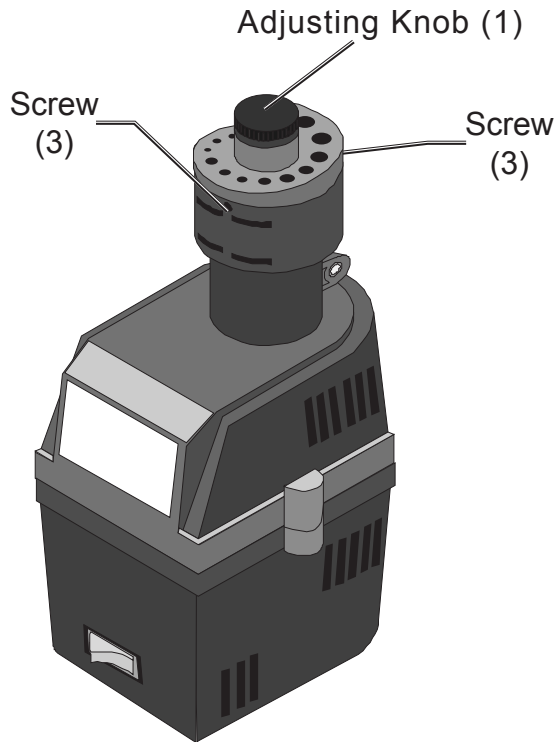
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## MAINTENANCE

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### Changing the Wheel

1. Change the GRINDING WHEEL (6) if grooves or ridges mar the evenness of the grinding surface.



**Figure 4 — Removing the Screws**

2. Remove the two SCREWS (3). See Figure 4.
3. Remove the Index Head Assembly (1, 2, & 7).
4. Remove the Wheel Assembly. Make sure the SPRING (10) stays in place. Refer to the Parts Diagram if necessary.
5. Unscrew the ADJUSTMENT CYLINDER (4) from the WHEEL BASE (7) by turning clockwise.
6. Pry out the WASHER (5).
7. Pop out the WHEEL BASE (7).

8. Press new WHEEL (6) onto WHEEL BASE (7), replace WASHER (5), and screw CYLINDER (4) back in.
9. Replace Wheel Assembly onto unit. Make sure that the inner flats of the ADJUSTMENT CYLINDER (4) match the outer flats of the DRIVE SPINDLE (11).
10. Replace the DRILL INDEX and SCREWS (3).

### Cleaning

1. Keep the surface of your unit free of grit, dirt, and grease. Use soapy water or non-toxic solvents. Do not use petroleum based solvents.
2. Keep the air vents free of foreign matter at all times.

### Operation Troubleshooting

1. If the motor turns on, but the wheel does not spin, make sure the ADJUSTMENT CYLINDER'S (4) inner flats are even with the outer flats of the SPINDLE (11) as described in "Maintenance, Changing the Wheel".
2. If the motor does not turn on, it needs to be serviced or replaced by a qualified technician.

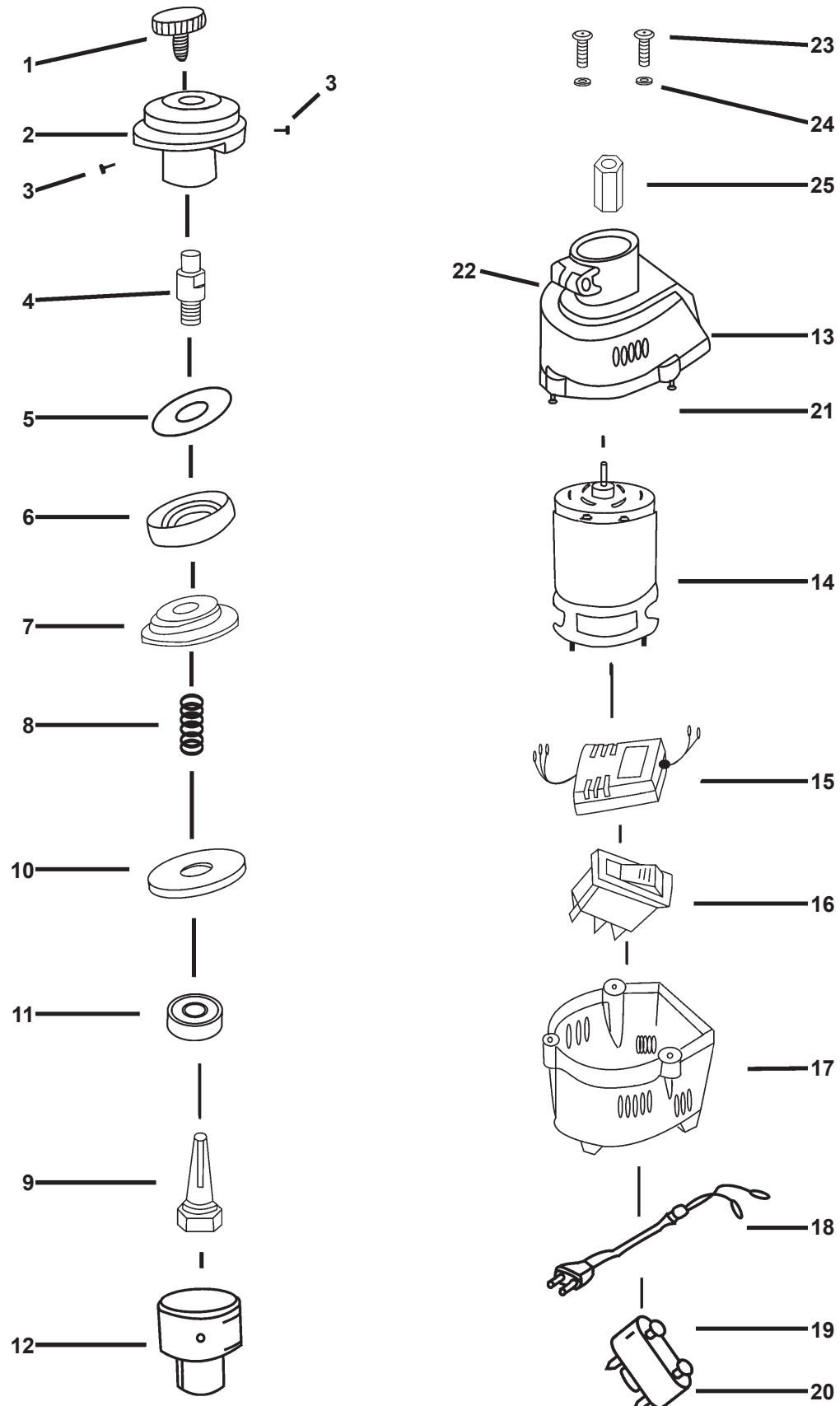
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## PARTS LIST

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Part	Description	Qty
1	Adjusting Knob	1
2	Drill Index	1
3	Round Screw	2
4	Spindle	1
5	Washer	1
6	Grinding Wheel	1
7	Wheel Base	1
8	Spring	1
9	Transmission Shaft	1
10	Dust Cover	1
11	Bearing	1
12	Drill Index Holder	1
13	Motor Housing, Upper	1
14	Motor	1
15	Voltage Regulator	1
16	Switch	1
17	Motor Housing, Lower	1
18	Cord	1
19	Round Screw	2
20	Cord Clamp	1
21	Screw	3
22	Bolt	1
23	Screw	2
24	Washer	2
25	Spindle Adaptor	1

# ASSEMBLY DIAGRAM



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## LIMITED 90 DAY WARRANTY

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Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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